

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

1-41. (Canceled)

42-61. (Canceled)

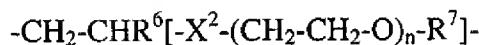
62. (New) A drilling fluid comprising:

a zwitterionic polymer comprising:

- at least 35 mol% of units comprising a betaine group, said betaine group comprising a cationic group and an anionic group, and

- additional units comprising:

alkoxylated units of formula:



wherein:

$\text{R}^6$  is a hydrogen atom or a methyl group,

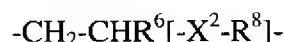
$\text{X}^2$  is a group of formula -CO-O-, -CO-NH- or -C<sub>6</sub>H<sub>4</sub>-CH<sub>2</sub>-,

n is an integer or mean number of greater than or equal to 1,

$\text{R}^7$  is a hydrogen atom, an alkyl group, or a tristyrylphenyl group,

and/or

hydroxylated units of formula:



wherein:

$\text{R}^6$  is a hydrogen atom or a methyl group,

$X^2$  is a group of formula -CO-O-, -CO-NH- or -C<sub>6</sub>H<sub>4</sub>-CH<sub>2</sub>-, and

$R^8$  is a hydrocarbon group comprising at least two carbon atoms

comprising at least two -OH groups.

63. (New) The drilling fluid of claim 62, wherein, said at least two -OH groups are bonded to two consecutive carbon atoms.

64. (New) The drilling fluid of claim 62, wherein the anionic group comprises a carbonate, sulfonate, phosphate, phosphonate, phosphinate, ethenolate group, or mixtures thereof, and

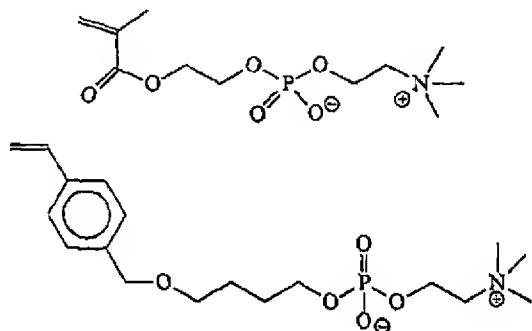
wherein the cationic group comprises an ammonium, pyridinium, imidazolinium, phosphonium, or sulfonium group, or mixtures thereof.

65. (New) The drilling fluid of claim 62, wherein the betaine groups are pendent groups of the polymer.

66. (New) The drilling fluid of claim 62, wherein the units comprising a betaine group are derived from at least one betaine monomer comprising:

alkyl sulfonates of dialkylammonium alkyl acrylates, alkyl sulfonates of dialkylammonium alkyl methacrylates, alkyl phosphonates of dialkylammonium alkyl acrylates, alkyl phosphonates of dialkylammonium alkyl methacrylates, alkyl sulfonates of dialkylammonium alkyl acrylamido, alkyl sulfonates of dialkylammonium alkyl methacrylamido, alkyl

phosphonates of dialkylammonium alkyl acrylamido, alkyl phosphonates of dialkylammonium alkyl methacrylamido, heterocyclic betaine monomers, alkyl sulfonates of dialkylammonium alkyl allylics, alkyl phosphonates of dialkylammonium alkyl allylics, alkyl sulfonates of dialkylammonium alkyl styrenes, alkyl phosphonates of dialkylammonium alkyl styrenes, betaines derived from ethylenically unsaturated anhydrides and dienes, sulfobetaines derived from piperazine, sulfobetaines derived from 2-vinylpyridine, sulfobetaines derived from 4-vinylpyridine, phosphobetaines of formulae:



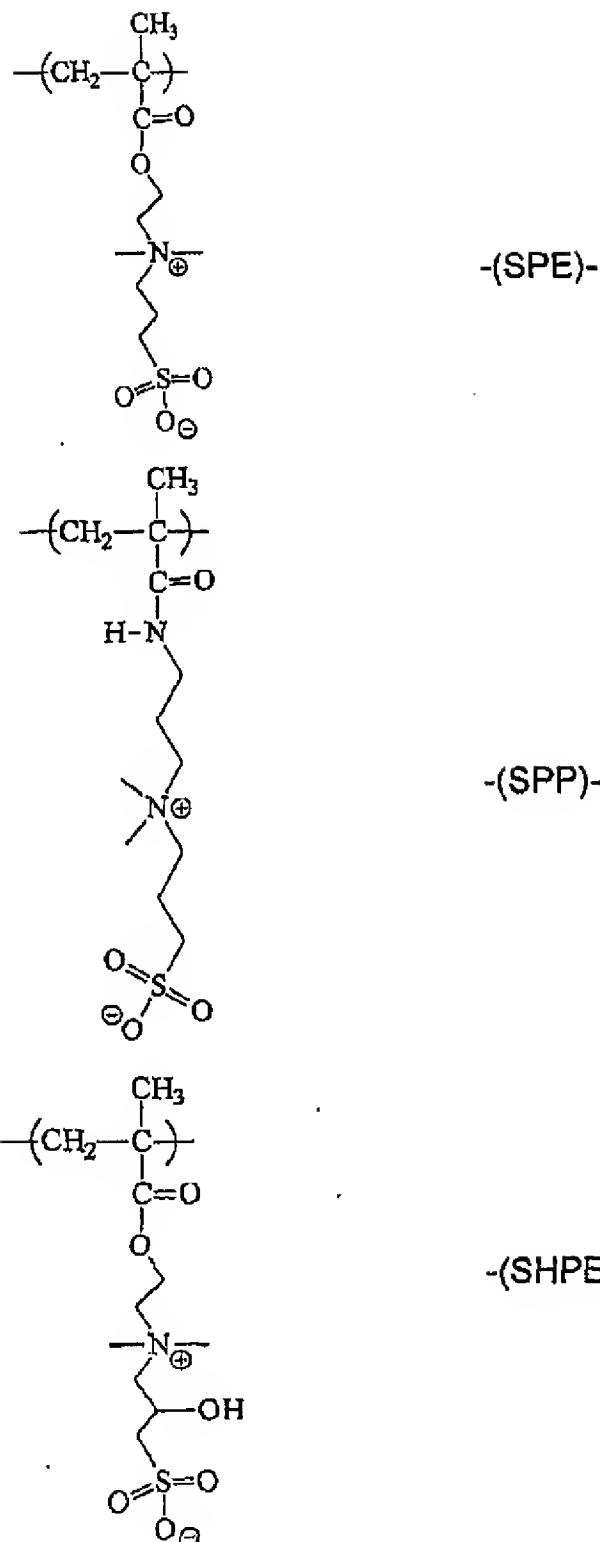
betaines derived from cyclic acetals, or  
mixtures thereof.

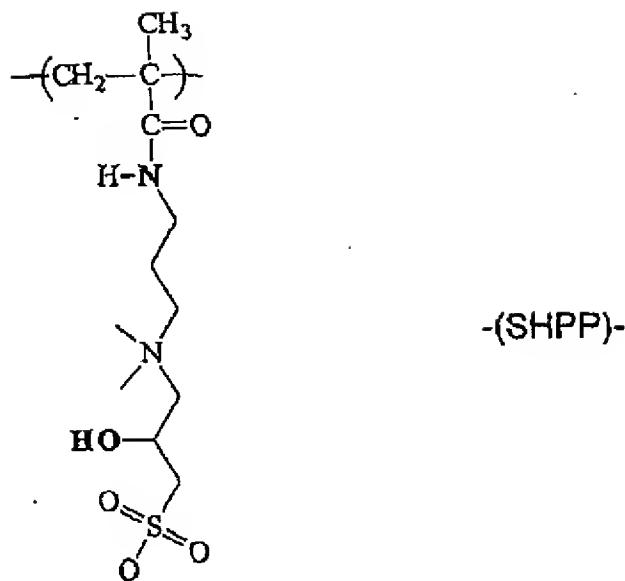
67. (New) The drilling fluid of claim 66, wherein the units comprising a betaine group are derived from at least one betaine monomer comprising:

sulfopropyldimethylammonioethyl methacrylate,  
sulfoethyldimethylammonioethyl methacrylate,  
sulfobutyldimethylammonioethyl methacrylate,  
sulfohydroxypropyldimethylammonioethyl methacrylate,  
sulfopropyldimethylammoniopropylacrylamide,

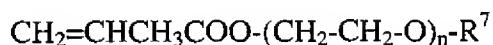
sulfopropyldimethylammoniopropylmethacrylamide,  
sulfopropyldiethylammonioethyl methacrylate,  
sulfohydroxypropyldimethylammoniopropylmethacrylamide,  
sulfohydroxypropyldiethylammonioethyl methacrylate,  
2-vinyl-1-(3-sulfopropyl)pyridinium betaine,  
4-vinyl-1-(3-sulfopropyl)pyridinium betaine,  
1-vinyl-3-(3-sulfopropyl)imidazolium betaine,  
sulfopropylmethyldiallylammonium betaine,  
((dicyanoethanolate)ethoxy)dimethylammoniumpropylmethacrylamide, or  
mixtures thereof.

68. (New) The drilling fluid of claim 62, wherein the units comprising a betaine group comprise compounds of one of the following formulae:





69. (New) The drilling fluid of claim 62, wherein the alkoxylated units are units derived from a monomer of formula:



wherein:

$n$  is an integer or mean number of greater than or equal to 1, and

$\text{R}^7$  is an alkyl group having 1 to 30 carbon atoms or a tristyrylphenyl group.

70. (New) The drilling fluid of claim 69, wherein:

$n$  is greater than or equal to 10, and

$\text{R}^7$  is a methyl group.

71. (New) The drilling fluid of claim 70, wherein  $n$  is greater than or equal to 15.

72. (New) The drilling fluid of claim 69, wherein:

n is greater than or equal to 10, and

R<sup>7</sup> is an alkyl group having from 12 to 30 carbon atoms.

73. (New) The drilling fluid of claim 72, wherein R<sup>7</sup> is an alkyl group having from 18 to 25 carbon atoms.

74. (New) The drilling fluid of claim 69, wherein:

n is greater than or equal to 10, and

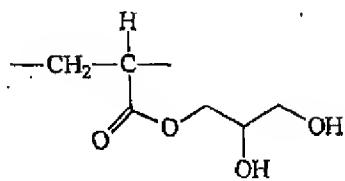
R<sup>7</sup> is a tristyrylphenyl group.

75. (New) The drilling fluid of claim 62 wherein:

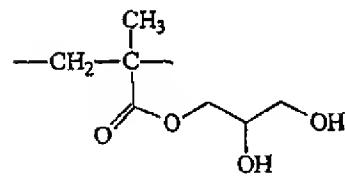
n is greater than or equal to 10, and

R<sup>7</sup> is a hydrogen atom.

76. (New) The drilling fluid of claim 62, wherein the hydroxylated units are chosen from the units of formulae:



-(GMAc)-



-(GMMA)-

77. (New) The drilling fluid of claim 62, not comprising other units, the polymer optionally exhibiting solely the units comprising a betaine group and the alkoxyolated units or solely the units comprising a betaine group and the hydroxylated units.

78. (New) The drilling fluid of claim 62, wherein said polymer has a weight-average molecular mass ranging from 5000 g/mol to 400 000 g/mol, in relative value, measured by GPC calibrated with poly(ethylene oxide) standards.

79. (New) The drilling fluid of claim 62, comprising:

units comprising a betaine group in an amount ranging from 70 to 90 mol%, and alkoxyolated units in an amount ranging from 10 to 30 mol%.

80. (New) The drilling fluid of claim 62, comprising:

units comprising a betaine group in an amount ranging from 80 to 100 (excluded) mol%, and hydroxylated units in an amount ranging from 20 to 0 (excluded) mol%.

81. (New) The drilling fluid of claim 62, comprising said polymer in an amount ranging from 0.1% to 10%.

82. (New) The drilling fluid of claim 81, comprising said polymer in an amount ranging from 1% to 3%.

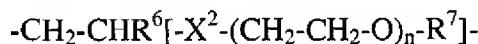
83. (New) A clay-swelling inhibitor and/or an accretion-inhibiting agent and/or a fluid-rheology-controlling agent and/or a filtrate-reducing agent and/or a lubricating agent for a drilling fluid, comprising:

a zwitterionic polymer comprising:

- at least 35 mol% of units comprising a betaine group, said betaine group comprising a cationic group and an anionic group, and

- additional units comprising:

alkoxylated units of formula:



wherein:

$\text{R}^6$  is a hydrogen atom or a methyl group,

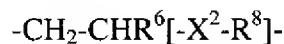
$\text{X}^2$  is a group of formula  $-\text{CO-O-}$ ,  $-\text{CO-NH-}$  or  $-\text{C}_6\text{H}_4\text{-CH}_2\text{-}$ ,

$n$  is an integer or mean number of greater than or equal to 1,

$\text{R}^7$  is a hydrogen atom, an alkyl group, or a tristyrylphenyl group,

and/or

hydroxylated units of formula:



wherein:

$\text{R}^6$  is a hydrogen atom or a methyl group,

$\text{X}^2$  is a group of formula  $-\text{CO-O-}$ ,  $-\text{CO-NH-}$  or  $-\text{C}_6\text{H}_4\text{-CH}_2\text{-}$ , and

$R^8$  is a hydrocarbon group comprising at least two carbon atoms comprising at least two -OH groups.